AMENDMENTS TO THE CLAIMS

CLAIMS (clean copy)

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1. (currently amended) A distributed subscriber management method for controlling user authentication at an access control node located between a plurality of user networks and an access network, the access network being connected to plurality of ISP (Internet service Provider) networks, the method comprising the steps of:

10   (a) receiving, at the access control node, which is operatively connected to the plurality of user networks, a data unit from a user located on one of the plurality of user networks for accessing at least one of the plurality of ISP networks connected to the access network;

                    (b) determining whether the data unit requires authentication for

15   accessing said at least one of the plurality of ISP networks;

                    (c) if the data unit requires authentication, determining whether authentication data for said at least one of the plurality of ISP networks is locally stored in a local authorization table on the access control node,

                    (d) if the authentication data is locally stored in the local

20   authorization table on the access control node, authenticating the data unit, thus preventing unnecessary traffic interchange between the access network, the plurality of ISP networks, and the plurality of user networks;

                    (e) if the authentication data is not locally stored in the local authorization table on the access control node, determining whether the data unit is eligible for

25   transmission to said at least one of the plurality of ISP networks ; and

                    (f) if the data unit is eligible for transmission, transmitting said data unit from the access control node to said at least one of the plurality of ISP networks .

2. (currently amended)   The distributed subscriber management method as claimed in claim

30   1, wherein the step (d) includes interrogating the user for access information to the plurality of ISP networks.

3. (currently amended)   The distributed subscriber management method as claimed in claim 1, wherein the step (f) comprises receiving, at the access control node, an authentication message for said data unit from the at least one of the plurality of ISP networks to permit the user to access said ISP network.

4. (canceled)   .

5. (currently amended)   The distributed subscriber management method as claimed in claim 2, further including encrypting the access information at the access control node prior to transmitting the access information to said at least one of the plurality of ISP networks.

6. (currently amended)   The distributed subscriber management method as claimed in claim 3, wherein the step of receiving, at the access control node, the authentication message for said data unit comprises storing authenticated data unit in the local authorization table on the access control node; and wherein the local authorization table comprises the authenticated data for the plurality of ISP networks.

7. (original)   The distributed subscriber management method as claimed in claim 6, wherein the step (b) comprises searching the authenticated data units stored in the local authorization table on the access control node.

8. (currently amended) The distributed subscriber management method as claimed in claim 3, wherein the step (f) comprises communicating with the plurality of ISP networks by employing one or more of standard authentication protocols selected from the list consisting of remote authentication dial-in user service protocol, password authentication protocol, challenge handshake authentication protocol, and terminal access controller access control system protocol.

9. (original) The distributed subscriber management method as claimed in claim 1, wherein the step (d) comprises employing one or more of standard authentication protocols selected from the list consisting of remote authentication dial-in user service protocol, password authentication protocol, challenge handshake authentication protocol, and terminal access

5   controller access control system protocol at the access control node.

10. (original)   The distributed subscriber management method as claimed in claim 3, wherein the step (f) further includes packet-labeling of the data unit.

10   11. (original)   The distributed subscriber management method as claimed in claim 6, wherein the step of receiving the authentication message further includes determining the contents of the authentication message at the access control node.

12. (original)   The distributed subscriber management method as claimed in claim

15   1, wherein the step (e) comprises examining the content of the authenticated data unit at the access control node.

14. (original)   The distributed subscriber management method as claimed in claim 1, further including collecting statistical usage information at the access node.

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15. (currently amended)   An integrated access device, for placement between a user network and plurality of ISP networks, the integrated access device comprising:

                    (i) a user network interface for operatively connecting to plurality of user networks to receive data units from the plurality of user networks;

25   (ii) an authentication agent, operatively connected to the user network interface for locally authenticating, authorizing, and forwarding data units received from the plurality of user networks;

                    (iii) an external network interface, operatively connected to the authentication agent, for forwarding data units locally authorized by the authentication agent to

30   at least one of the plurality of ISP networks; and

                    (iv) means for communicating with said plurality of ISP networks.

16. (original)   An integrated access device as claimed in claim 15, wherein the user
network interface includes a plurality of ingress cards and the external network interface

5   includes an egress card.

17. (currently amended)   An integrated access device as claimed in claim 15, wherein the
authentication agent includes a local authorization table for authorizing data units for said
plurality of ISP networks.

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18. (original)   An integrated access device as claimed in claim 15, wherein the
authentication agent includes network address assignment and release means.

19. (original)   An integrated access device as claimed in claim 15, further including

15   service level enforcing means, network resource management means, means for statistical
usage collection, and alarm monitoring means.

20. (currently amended)   An integrated access device as claimed in claim 17, wherein the
means for communicating with the plurality of ISP networks comprises:

20   (p) means for determining whether the data unit is eligible for
transmission from the access control node to at least one of the plurality of ISP networks;
                           (q) means for transmitting the data unit from the access control node
to the plurality of ISP networks;
                           (r) means for receiving, at the access control node, an authentication

25   message for said data unit from at least one of said plurality of ISP networks to permit the user
to access said ISP network; and
                           (s) means for storing authenticated data units for said plurality of ISP
networks in a local authorization table on the access control node.

30   21. (currently amended)   An integrated access device as claimed in claim 15, wherein the
authentication agent employs a password authentication protocol.

22. (currently amended)   An integrated access device as claimed in claim 15, wherein the authentication agent employs a challenge handshake authentication protocol.

5   23. (original)   An integrated access device as claimed in claim 15, wherein the authentication agent includes a terminal access controller access control system.

24. (currently amended)   An integrated access device as claimed in claim 15, wherein the authentication agent employs a remote authentication dial-in user service protocol.

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25. (currently amended)   An access control node, for placement between plurality of user networks and plurality of ISP networks, the access control node comprises the integrated access device claimed in claim 15.

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